QUALITY OF E-CONTENTS ON DIKSHA PLATFORM: A STUDY OF SECONDARY SCHOOL TEACHERS' PERCEPTIONS

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ABSTRACT

The rapid digital transformation in education has highlighted the critical role of e-content platforms in enhancing teaching and learning. DIKSHA (Digital Infrastructure for Knowledge Sharing), an initiative by the Ministry of Education, aims to provide high-quality, curriculum-aligned e-content for educators and students. This study investigates secondary school teachers' perceptions of the quality of e-content on the DIKSHA platform, focusing on content, pedagogy, and technological dimensions. Data were gathered from 119 secondary school teachers, categorized by gender and location, using a survey-based descriptive quantitative method. Districts and schools were selected through simple random sampling, while teachers were chosen through purposive sampling. The collected data were analyzed through percentage analysis of different dimensions and t-test to assess variations by gender and location of the secondary school teachers. Results revealed positive perceptions regarding content alignment, engagement strategies, and accessibility, but highlighted challenges in inclusivity, assessment integration, and mobile compatibility. No significant differences were observed in teachers' perceptions based on gender or location. The findings underscore the need for strategic enhancements in content inclusivity, self-paced learning features, and technological design to optimize DIKSHA's impact. This study provides actionable insights for refining digital learning platforms to better meet the diverse needs of educators and learners.

KEYWORDS: Quality of E-Contents, DIKSHA Platform, Teachers Perceptions

CONCEPTUALISATION OF THE PROBLEM

Information technology has revolutionized education, driving digital transformation and reshaping traditional learning (Haleem et al., 2022). Digitalization has gained attention from educators, researchers, and policymakers, emphasizing the integration of e-content in teaching (Qureshi et al., 2021). The DIKSHA (Digital Infrastructure for Knowledge Sharing) platform, launched in 2017 by the Ministry of Education, Government of India, serves as a vital resource for educators and students. It offers high-quality, curriculum-aligned e-content, including interactive videos, lesson plans, and worksheets, to enhance learning outcomes (MHRD, 2017). E-content quality is crucial for user engagement, trust, and retention. In a competitive digital landscape, learners prefer well-structured, professional content. DIKSHA ensures content quality through expert collaboration, rigorous curation, and adherence to the National Digital Education Architecture (NDEAR) framework. The platform integrates multimedia tools—videos, quizzes, and interactive lessons—to create an engaging learning experience. Additionally, it promotes accessibility and inclusivity by offering content in multiple languages and formats. By maintaining high standards, DIKSHA enhances digital learning, fostering an effective and inclusive educational environment.

THEORETICAL FRAMEWORK

The theoretical framework for this study on the quality of e-contents on the DIKSHA platform integrates principles of instructional design and technology acceptance. DIKSHA, launched in 2017 by the Ministry of Education. The platform offers resources such as lesson plans, concept videos, and assessment aids, accessible across multiple digital devices, thereby aiming to enhance educational outcomes. This study examines secondary school teachers' perceptions through the lens of the Technology Acceptance Model (TAM) and Quality Matters (QM) standards. According to Davis (1989), TAM emphasizes perceived ease of use and perceived usefulness as critical factors in technology adoption, which are essential in understanding how teachers evaluate and utilize DIKSHA's e-contents. Furthermore, QM standards outline criteria for assessing the quality of digital educational resources, focusing on content accuracy, alignment with curriculum goals, interactivity, accessibility, and pedagogical effectiveness.

REVIEW OF LITERATURES

The quality of e-content is increasingly evaluated based on its relevance and curriculum alignment, both of which significantly impact pedagogical effectiveness and learner outcomes. Relevance refers to the extent to which e-content meets learners' needs, interests, and prior knowledge, reflecting real-world applications and meaningful contexts. Studies suggest that relevant content enhances engagement and retention, promoting better knowledge application (Keller, 1987; Biggs & Tang, 2011). Multimedia learning theories also emphasize that incorporating well-structured multimedia elements, such as videos and simulations, improves comprehension when integrated thoughtfully (Mayer, 2009). Curriculum alignment,

on the other hand, ensures that e-content adheres to established learning objectives, standards, and assessment criteria, creating coherence between delivered content and desired educational outcomes. Voogt and Roblin (2012) highlight its role in integrating 21st-century skills, such as critical thinking and digital literacy, into educational materials. However, achieving relevance and alignment simultaneously poses challenges, as relevance requires personalization for diverse learner profiles, while alignment demands adherence to standardized curricula, often leading to tensions (Bates, 2015). Emerging technologies like adaptive learning systems and artificial intelligence provide solutions by tailoring content to individual needs while ensuring curricular alignment (Siemens et al., 2011). Nevertheless, the absence of standardized guidelines for e-content development and rapidly changing educational standards calls for continuous collaboration among educators, policymakers, and content developers.

Accessibility and usability are also vital indicators of high-quality e-content, ensuring inclusivity and user-friendliness. Accessibility involves designing content to accommodate individuals with disabilities and aligning with global standards like the Web Content Accessibility Guidelines (WCAG). Singh and Joshi (2019) emphasize the importance of accessible content in promoting equitable learning, including features like screen reader compatibility. Similarly, usability focuses on intuitive navigation, responsive design, and minimal cognitive load, improving engagement (Sharma & Gupta, 2018). Combining both principles, accessible and usable e-content addresses technical standards and practical learning needs, benefiting diverse learner groups (Kumar & Rao, 2020). However, challenges such as limited awareness of accessibility guidelines and the cost of assistive technologies persist (Mishra et al., 2017).

Finally, pedagogical value and technological quality are integral to effective e-content. Pedagogical value ensures alignment with instructional goals, fostering meaningful learning, while technological quality encompasses usability, functionality, and device compatibility (Branch, 2009; Rana et al., 2018). Advances in artificial intelligence and virtual reality are bridging gaps, making e-learning more immersive and individualized (Gupta & Sharma, 2020). Despite these advancements, a robust quality assurance framework is necessary to balance both pedagogical and technological considerations.

RATIONALE OF THE STUDY
The DIKSHA platform aims to enhance the teaching, learning, and evaluation process while supporting teacher preparation and professional development (NEP, 2020). By providing curriculum-linked resources and accessible professional training, DIKSHA empowers teachers to prepare and teach effectively. Secondary school teachers, as the intermediaries between curriculum and students, play a crucial role in the success of DIKSHA. Their perceptions of the platform's e-content—regarding quality, relevance, accessibility, and usability—are key to assessing its effectiveness. High-quality e-content should align with the curriculum and employ innovative teaching strategies (El-Sabagh, 2021; Paramasivam

& Nachimuthu, 2022). However, concerns persist about the platform's accessibility issues and gaps in content alignment (Vernekar & Bhardwaj, 2021). While some educators appreciate its comprehensive resources, others highlight technological and training challenges. This study aims to explore secondary school teachers' perceptions of DIKSHA's e-content, focusing on content accuracy, pedagogical value, and technological compatibility, to provide insights for enhancing its effectiveness in the evolving educational landscape.

RESEARCH OBJECTIVES
1. To study the quality of e-contents available in DIKSHA platform as perceived by the secondary school teachers in terms of content, pedagogy and technology dimensions.
2. To identify any significant differences in the perception of secondary school teachers on the e-contents quality in DIKSHA platform according to their gender and location.

RESEARCH QUESTIONS
1. What do the secondary school teachers perceive about the quality of e-content available in DIKSHA platform?
2. Is there any significant differences in the perception of secondary school teachers on the e-contents quality in DIKSHA platform according to their gender and location?

RESEARCH HYPOTHESIS
1. There is no significant differences in the perception of secondary school teachers on e-contents quality in DIKSHA platform according to their gender.
2. There is no significant differences in the perceptions of secondary school teachers on e-contents quality in DIKSHA platform according to their location.

METHODOLOGY
Research design and instrument
This study was conducted using a descriptive quantitative approach and a survey method. A three-point Likert scale questionnaire was used to collect data on secondary school teachers' perceptions of the quality of e-content available on the DIKSHA platform. The data were analyzed using SPSS-20, with Cronbach's Alpha reliability statistics calculated. The self-developed questionnaire comprised 35 items, categorized into three dimensions: Content, Pedagogy, and Technology. The reliability coefficient was determined to be 0.925, and expert recommendations were sought for validity. Further, the collected data were analyzed using a t-test and percentage analysis.

Sampling and Sample
In this study the population of interest was the govt. secondary school teachers of Odisha. Two districts of Odisha state i.e. Mayurbhanj and Balasore were randomly selected. After selection of the two districts, 6 Blocks (3 from each district) were also randomly selected. As the study was focused to assess the perception of secondary school teachers on DIKSHA e-content, the teachers were selected by using purposive sampling technique. Because the researcher found that, most of the teachers in secondary schools of both the districts were newly appointed and had less or no experience of using

DIKSHA platform. Therefore in order to collect best data from the secondary school teachers those who had experience of using DIKSHA platform were purposively selected. A total of 119 teachers from secondary schools were chosen from both districts.

Delimitation of the Study

The study is carried out only in government secondary schools. Secondary teachers who had experience of using DIKSHA platform were only included in the sample. The Social Cognitive Theory of Albert Bandura (1986), suggest that human behavior and their perception is influenced by personal, behavioral, and environmental factors. Similarly the Digital Divide Theory of Jan A.G.M. van Dijk (2006), explains how structural inequities related to geographic factors creates a gap between those who have access to digital technology and those who do not. Therefore in accordance with the theories, two major types of variable i.e. location and gender of the secondary school teachers have been studied.

RESULT

Statements	Yes (%)	No (%)	Undecided (%)
Contents are aligned with learning outcomes	112 (94.11%)	4 (3.36%)	3 (2.52%)
Contents provided by DIKSHA are up-to-date	104 (87.39%)	12 (10.08%)	3 (2.52%)
Contents depth are appropriate to learner needs	104 (87.39%)	10 (8.40%)	5 (4.20%)
Contents are comprehensible for the target groups.	105 (88.23%)	10 (8.40%)	4 (3.36%)
Level of difficulty is appropriate for intended audience	100 (84.03%)	10 (8.40%)	9 (7.56%)
Contents are not derogatory to any gender	98 (82.35%)	16 (13.44%)	5 (4.20%)
Contents are applicable for Children With Special Needs	81 (68.06%)	20 (16.80%)	18 (15.12%)
Content sequencing are appropriate	94 (78.99%)	18 (15.12%)	7 (5.88%)
Content is supported by relevant examples	96 (80.67%)	10 (8.40%)	13 (10.92%)
Contents are carried activities for further learning	100 (84.03%)	9 (7.56%)	10 (8.40%)
Assessment is integrated with e-contents	80 (67.22%)	20 (16.80%)	19 (15.96%)

Table 1: Perception percentage of secondary teachers on content dimension

The data reflects secondary school teachers' perceptions of the content dimension across various statements, highlighting both strengths and areas for improvement. A substantial 94.11% of teachers agree that the contents align with learning outcomes, showcasing a key strength in educational alignment, with minimal disagreement or indecision. Similarly, 88.23% find the content comprehensible for the target groups, and 87.39% believe the content depth is appropriate to learner needs and is up-to-date, suggesting a strong positive reception in these areas. However, while 84.03% feel the difficulty level is appropriate, and 80.67% agree that content is supported by relevant examples, there remains a notable minority expressing concerns or uncertainty.

Regarding inclusivity, 82.35% affirm the content is non-derogatory to any gender, but only 68.06% find it applicable for children with special needs, reflecting a critical area for development. Similarly, the integration of assessments with e-content sees lower agreement, with just 67.22% in favor, and nearly 17% expressing disagreement. Sequencing of content is seen as appropriate by 78.99%, while 84.03% agree that contents facilitate further learning through activities, highlighting a positive perception of continuity and reinforcement in learning materials. Overall, the data reveals strong alignment and relevance of the content while underscoring the need to enhance inclusivity and assessment integration to meet diverse learner needs effectively.

Statements	Yes (%)	No (%)	Undecided (%)
Introduction of concepts are well established	112 (94.11%)	5 (4.20%)	2 (1.68%)
Promotes learner engagement	92 (77.31%)	19 (15.96%)	8 (6.72%)
Helps in retaining learner interest	95 (79.83%)	14 (11.76%)	10 (8.56%)
Contents encourages learners creativity	96 (80.67%)	16 (13.44%)	7 (5.88%)
Contents encourages self-paced learning	75 (63.02%)	26 (21.84%)	18 (15.12%)
Time of content explanation is adequate	67 (56.30%)	40 (33.61%)	12 (10.08%)

Contents provides feedback to the learner	97 (81.51%)	9 (7.56%)	13 (10.92%)
Contents suggest for activities	97 (81.51%)	17 (14.28%)	5 (4.20%)
Concepts are clearly summarized	99 (83.19%)	15 (12.60%)	5 (4.20%)
Technical terms are consistently explained	85 (71.42%)	30 (25.21%)	4 (3.36%)
The pedagogy and content are synchronised	92 (77.31%)	14 (11.76%)	13 (10.92%)
Content pedagogy appropriate to the student's level	102 (85.71%)	8 (6.72%)	9 (8.56%)

Table 2: Perception percentage of secondary teachers on pedagogy dimension

The data reveals varied perceptions of secondary teachers regarding different pedagogy dimensions. A striking 94.11% of teachers agree that the introduction of concepts is well-established, showcasing a clear strength in this area, while only 4.20% disagree, and 1.68% remain undecided. Similarly, a high percentage (81.51%) affirm that the content provides feedback and suggests activities, emphasizing effective engagement strategies. Creativity is encouraged according to 80.67%, while 79.83% believe the content helps retain learner interest, highlighting an overall positive reception. However, only 63.02% think the content supports self-paced learning, with a notable 21.84% disagreement and 15.12% undecided, reflecting a potential area for improvement. Another aspect requiring attention is the adequacy of time for content explanation, where just 56.30% express agreement, while 33.61% disagree. Most teachers (83.19%) feel concepts are clearly summarized, and 77.31% agree that pedagogy and content are synchronized, though 22% indicate concerns or uncertainty in these areas. Furthermore, 85.71% of teachers view the content as appropriate to students' levels, yet only 71.42% feel technical terms are consistently explained, leaving 25.21% dissatisfied. Overall, the data underscores strengths in concept introduction and engagement but also highlights areas such as time management and self-paced learning where improvements could enhance the pedagogy's effectiveness.

Statements	Yes (%)	No (%)	Undecided (%)
User navigation is appropriate to the target audience	86 (72.26%)	19 (15.96%)	14 (11.76%)
Content can easily load on a mobile phone	79 (66.38%)	37 (31.09%)	3 (2.52%)

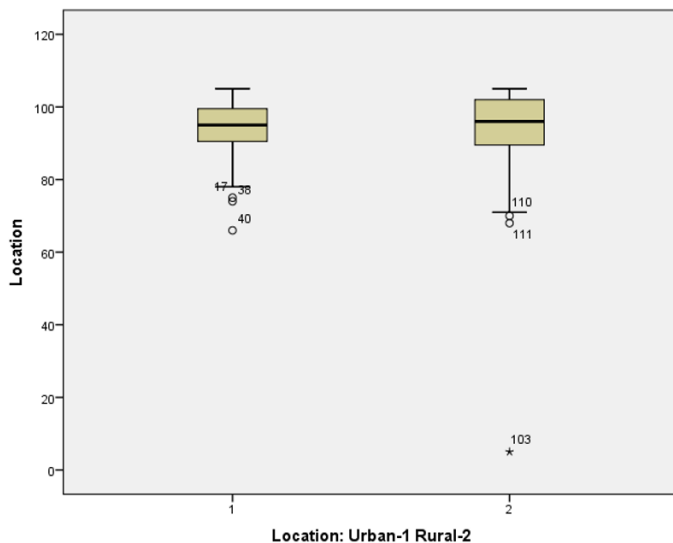|			
Content, pedagogy, and technology are all synchronized	78 (65.54%)	38 (31.93%)	3 (2.52%)
Animation is appropriate	85 (71.42%)	20 (16.80%)	14 (11.76%)
Appropriate use of music/sound effects	69 (57.98%)	37 (31.09%)	13 (10.92%)
Visual effects are used appropriately	80 (67.22%)	32 (26.89%)	7 (5.88%)
Character size in the contents is appropriate	86 (72.26%)	18 (15.12%)	14 (11.76%)
Variety of media used in the contents	71 (59.66%)	31 (26.05%)	17 (15.28%)
Appropriate instruction for using e-contents has been provided	90 (75.63%)	13 (10.92%)	16 (13.44%)
Contents does not have copyrights issue	77 (64.70%)	26 (21.84%)	16 (13.44%)
Contents does not have copyrights issue	59 (49.57%)	54 (45.37%)	6 (5.04%)
Feedback is integrated appropriately	88 (73.94%)	18 (15.12%)	13 (10.92%)

Table 3: Perception percentage of secondary teachers on technology dimension

The data presents secondary teachers' perceptions of the technology dimension, showcasing varied responses to different aspects. A majority, 75.63%, agree that appropriate instructions for using e-contents are provided, with only a small fraction (10.92%) disagreeing. Similarly, 73.94% feel feedback is integrated appropriately, indicating a strong positive perception of these aspects. Navigation ease and character size are also well-rated, with 72.26% agreement for both. However, content loading on mobile phones and the synchronization of content, pedagogy, and technology received lower agreement levels at 66.38% and 65.54%, respectively, while over 30% expressed dissatisfaction with these areas. Animation and visual effects were positively perceived, with over 67% agreement, but the use of music/sound effects and variety in media garnered mixed reviews, with only 57.98% and 59.66% in agreement, suggesting areas for improvement.

Concerns about copyright issues were highlighted, with only 64.70% believing there are no problems, and a substantial 21.84% disagreeing. Additionally, only 49.57% agree there are no copyright issues in a specific statement, indicating potential confusion or inconsistency in this area. Overall, while technology integration shows strengths in user navigation, feedback, and comprehensibility, the mixed responses in media variety, mobile compatibility, and copyright concerns underscore the need for enhancements to ensure a more

seamless and inclusive user experience.

Hypothesis 1: There is no significant differences between the perceptions of secondary school teachers on e-contents quality in DIKSHA platform according to their location.
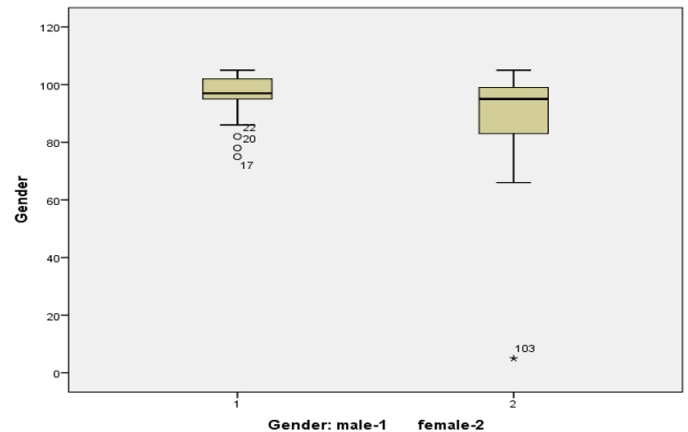

The boxplot compares two groups, Urban (1) and Rural (2), based on a measured variable. Both groups have similar median values, indicating comparable central tendencies. However, the rural group (2) shows slightly higher variability, as seen in its larger interquartile range (IQR). Further to determine if the differences between the two groups are significant or not t-test have been used.

Variable	Group	N	Mean	SD	DF	t-value	Level of Confidence
Location	Rural	71	92.60	18.38	117	0.7113	95%
	Urban	48	93.42	9.19			

Table 4: significant differences between the perceptions of secondary school teachers on e-contents quality in DIKSHA platform according to their location.

The above data reflect the perceptions of secondary school teachers regarding the quality of e-contents on the DIKSHA platform, categorized by location (rural vs. urban). A total of 71 rural teachers participated, with a mean perception score of 92.60 and a standard deviation of 18.38. In contrast, 48 urban teachers contributed data, showing a slightly higher mean score of 93.42 and a lower standard deviation of 9.19. The t-test for differences between these groups resulted in a t-value of 0.7113 with 117 degrees of freedom, evaluated at a 95% confidence level. These results indicate no significant difference in perceptions based on location, suggesting a generally consistent view of e-content quality across rural and urban teachers.

Hypothesis 2: There is no significant differences between the perceptions of secondary school teachers on e-contents quality in DIKSHA platform according to their gender.

The boxplot compares males (1) and females (2) based on a measured variable. Both groups have similar median values, indicating comparable central tendencies. However, females (2) exhibit greater variability, as seen in their larger interquartile range (IQR). Further to determine if the differences between the two groups are significant or not, t-test have been used.

Variable	Group	N	Mean	SD	DF	t-value	Level of Confidence
Gender	Male	37	99	5.65	117	0.020	95%
	Female	82	76.5	3.53			

Table 5: Significant differences between the perceptions of secondary school teachers on e-contents quality in DIKSHA platform according to their gender.

The data provided examines the perceptions of secondary school teachers regarding the quality of e-contents on the DIKSHA platform, classified by gender. A total of 37 male teachers participated, with a mean perception score of 99 and a standard deviation of 5.65. Meanwhile, 82 female teachers were surveyed, showing a lower mean score of 76.5 and a standard deviation of 3.53. The t-test analysis for gender-based differences yielded a t-value of 0.020 with 117 degrees of freedom at a 95% confidence level. These findings indicate no statistically significant difference in perceptions between male and female teachers, suggesting that gender does not significantly influence views on the quality of e-content on the platform.

DISCUSSION
The findings from this study highlight key insights into the perceptions of secondary school teachers regarding the quality of e-content provided on the DIKSHA platform, focusing on content, pedagogy, technology, and demographic factors. The content dimension revealed positive feedback on alignment with learning outcomes, comprehension, and appropriateness for learner needs, but inclusivity for children with special needs and assessment integration showed room for improvement. Similarly, in pedagogy, while concept introduction and engagement strategies were well-regarded, self-paced learning and the adequacy of content explanation require further enhancement. Technological dimensions showed strengths in user navigation and feedback integration, yet significant concerns arose over mobile compatibility, media variety,

and copyright clarity. Hypothesis testing demonstrated no significant differences in perceptions based on either location or gender, reflecting a generally consistent experience across diverse teacher groups. However, the notable variance in mean scores between male and female participants, despite statistical insignificance, suggests potential areas for further qualitative exploration to understand underlying factors.

CONCLUSION

The results indicate that while DIKSHA e-contents are broadly perceived positively by secondary school teachers in terms of quality and relevance, strategic improvements in inclusivity, self-paced learning features, and technology integration are essential for enhancing user experience. Addressing mobile accessibility, expanding media diversity, and resolving copyright clarity will contribute to a more comprehensive and effective digital learning platform. Furthermore, the absence of significant differences by gender and location implies equitable access and perceptions, but nuanced improvements targeting diverse teaching needs will further strengthen content adoption and impact. These findings offer a foundation for iterative development and continuous enhancement of e-learning resources to support effective teaching and learning outcomes.

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